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SEQUENCE LISTING

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<120> GLUCAGON-LIKE PEPTIDE-1 CRYSTALS

<130> X-10242

<140> PCT/US98/26480

<141> 1998-12-14

<160> 29

<170> PatentIn version 3.0

<210> 1

<211> 31

<212> PRT

<213> Homo sapiens

<400> 1

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 2

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<220>

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<220>

<221> VARIANT

<222> (1)..(1)

<223> Xaa at position 1 is L-histidine, D-histidine, desamino-histidine, 2-amino-histidine, beta-hydroxy-histidine, homohistidine, alpha-fluoromethyl-histidine, and alpha-methyl-histidine

<220>

<221> VARIANT

<222> (2)..(2)

<223> Xaa at position 2 is Ala, Gly, Val, Thr, Met, Ile, and alpha-methyl-Ala

<220>

<221> VARIANT

<222> (15)..(15)

<223> Xaa at position 15 is Glu, Gln, Ala, Thr, Ser, and Gly

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<220>
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 <222> (21)..(21)
 <223> Xaa at position 21 is Glu, Gln, Ala, Thr, Ser, and Gly

<220>
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 <222> (31)..(31)
 <223> Xaa at position 31 is NH2 and Gly-OH

<400> 2

Xaa Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Xaa Gly
 1 5 10 15

Gln Ala Ala Lys Xaa Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa
 20 25 30

<210> 3
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 <222> (28)..(28)
 <223> Xaa at position 28 is Lys or absent

<220>
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 <222> (29)..(29)
 <223> Xaa at position 29 is Gly or absent;and, if Xaa at position 28 is
 absent, Xaa at position 29 must be absent

<400> 3

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Xaa Xaa
 20 25

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<222> (1)..(1)
 <223> Xaa at position 1 is 4-imidazopropionyl, 4-imidazoacetyl, or 4-imidazo-a, a dimethyl-acetyl

<220>
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 <222> (20)..(20)
 <223> Xaa at position 20 is Lys or Arg

<220>
 <221> VARIANT
 <222> (31)..(31)
 <223> Xaa at position 31 is Gly-OH or NH2

<400> 4

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa
 20 25 30

<210> 5
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<220>
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 <222> (2)..(2)
 <223> Xaa at position 2 is Val

<400> 5

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 6
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 <222> (13)..(13)
 <223> Xaa at position 13 is Glu, Gln, Ala, Thr, Ser or Gly

<220>
 <221> VARIANT
 <222> (19)..(19)
 <223> Xaa at position 19 is Glu, Gln, Ala, Thr, Ser or Gly

<220>
 <221> VARIANT
 <222> (29)..(29)
 <223> Xaa at position 29 is Gly or absent

<400> 6

Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Xaa Gly Gln Ala
 1 5 10 15

Ala Lys Xaa Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa
 20 25

<210> 7
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<220>
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 <222> (19)..(19)
 <223> Xaa at position 19 is Lys or Arg

<220>
 <221> VARIANT
 <222> (30)..(30)
 <223> Xaa at position 30 is Gly or is absent; and Lys at position 27
 may be acylated

<400> 7

Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15

Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Xaa
 20 25 30

<210> 8
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<220>
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<400> 8

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys
 20 25

<210> 9

<211> 29

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 9

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly
 20 25

<210> 10

<211> 30

<212> PRT

<213> Artificial

<220>

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<400> 10

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 11

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<400> 11

His Ala Gln Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 12

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<220>

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<222> (3)..(3)

<223> Xaa at position 3 is D-Gln

<400> 12

His	Ala	Xaa	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly	
			20					25					30		

<210> 13

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 13

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Thr	Ser	Lys	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly	
			20					25					30		

<210> 14

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 14

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Lys	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly	
			20					25					30		

<210> 15

<211> 30

<212> PRT

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<220>

<223> synthetic construct

<400> 15

His Gly Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 16

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 16

His Gly Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 17

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 17

His Val Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 18

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 18

His Met Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 19

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<220>

<221> VARIANT

<222> (3)..(3)

<223> Xaa at position 3 is acetyl-Lys

<400> 19

His	Ala	Xaa	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly
			20					25					30	

<210> 20

<211> 31

<212> PRT

<213> Artificial

<220>

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<400> 20

His	Ala	Thr	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly
			20					25					30	

<210> 21

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<220>

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<220>

<221> VARIANT

<222> (3)..(3)

<223> Xaa at position 3 is D-Thr

<400> 21

His	Ala	Xaa	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly
			20					25					30	

<210> 22

<211> 31

<212> PRT
 <213> Artificial

<220>
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<400> 22

His Ala Asn Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 23
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<220>
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<220>
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 <222> (3)..(3)
 <223> Xaa at position 3 is D-Asn

<400> 23

His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 24
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 <212> PRT
 <213> Artificial

<220>
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<400> 24

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Ser
 1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 25
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 <212> PRT
 <213> Artificial

<220>
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<400> 25

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Arg Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 26

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 26

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Arg Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 27

<211> 30

<212> PRT

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<220>

<223> synthetic construct

<220>

<221> VARIANT

<222> (2)..(2)

<223> Xaa at position 2 is alpha-methyl-Ala

<400> 27

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 28

<211> 31

<212> PRT

<213> Artificial

<220>

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<400> 28

His Gly Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Gln Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 29

<211> 31

<212> PRT

<213> Artificial

<220>

<223> synthetic construct

<400> 29

His Thr Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30